



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,475	06/27/2001	Lynn Bich-Quy Le	8032987/JAS	5940

7590

05/02/2003

MOSER, PATTERSON & SHERIDAN, LLP
350 CAMBRIDGE AVENUE
SUITE 250
Palo Alto, CA 94306-4036

EXAMINER

NGUYEN, HANH N

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 05/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/894,475

Applicant(s)

LE ET AL.

Examiner

Nguyen N Hanh

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. In view of amendments and Applicant's arguments, the Examiner withdraws the objections to the drawings, the specifications and the rejection under 35 U.S.C 112, second paragraph to claims 4-6,8-10,12 and 14-20. However, the Examiner maintains the rejection under 35 U.S.C 102 to claims 1-20.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claim 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Miura et al.

Regarding claim 1, Miura et al. disclosed a spindle motor for use in a disk drive comprising a shaft (41 in Fig. 2) supporting a thrust plate (43) at one end thereof, a sleeve (33) surrounding the shaft, and rotatable relative to the shaft and supporting a hub (34) on the outer surface thereof, the sleeve having a surface adjacent the thrust plate (33a) and cooperating with the shaft to define a journal bearing and with the thrust plate to define a first fluid dynamic thrust bearing (Sba), a counterplate (43) welded

(abstract) to an upraised axial shoulder of the sleeve and having a surface located adjacent a surface of the thrust plate to define at least a second fluid dynamic thrust bearing (SBb), fluid within the first and second thrust bearings and the journal bearing supporting relative rotation of shaft and sleeve, and a groove region (groove 1 or 2) defined in the shoulder of the sleeve radially aligned with and adjacent the counter plate, and extending at or near the centerline of the counter plate (it is noted the grooves extend almost half of the thickness of the counterplate in axial direction as shown clearly in Fig. 2)

Regarding claim 12, it is noted that Miura et al. have fulfilled all the limitation of the claimed invention when showing a fluid dynamic bearing with a counterplate welded to an upraised arm of the sleeve and a groove region (1 or 2) defined in the arm of the sleeve (or shoulder of sleeve) radially aligned with and adjacent the counter plate, and extending at or near the centerline of the counter plate.

Regarding claim 20, it is noted that Miura et al. have fulfilled all the limitation of the claimed invention when showing a fluid dynamic bearing with means (groove 1, 2 and the grooves on top of grooves 1 and 2 in axial direction as clearly shown in Fig. 2) defined in the upraised axial shoulder for weakening the radial stiffness of the wall.

Regarding claim 2,3,13 and 14, Miura et al. also show a fluid dynamic bearing for use in a spindle motor wherein the groove region (groove 1) extends at least part way axially into the radially inner portion of the sleeve shoulder (or arm) and the groove additionally extends into the radially outer surface of the counterplate (tapered along the radially outer surface of the counter plate).

Regarding claim 11, Miura et al. also show a spindle motor wherein the radially outer wall of the groove (groove 1) is tapered toward the radially outer wall of the shoulder.

Regarding claim 4 and 16, Miura et al. also show a fluid dynamic bearing for use in spindle motor wherein the grooved region (groove 1) extends to about half the axially extent of the counterplate.

Regarding claim 5 and 6, Miura et al. also show a spindle motor wherein the groove (groove 2) is cut into the radially outer surface of the sleeve arm in a region near to the gap between the counterplate and the thrust plate and the groove is as an axially extent which is approximately half the width or axial width of the counterplate.

Regarding claim 7,8,15 and 16, Miura et al. also show a fluid dynamic bearing for use in spindle motor wherein the groove (groove 2) extends axially down the radially outer surface of the sleeve arm and the groove has an axial extent equal to about half the axial depth of the counterplate.

Regarding claim 9,10,17 and 18, Miura et al. also show a fluid dynamic bearing for use in spindle motor wherein the groove (groove 1) extends radially away from the counterplate into the sleeve, and extends from a point near to the junction between the radial and axial walls of the sleeve wall approximately part way toward the upper axial surface of the arm and the groove is about half the axial width of the sleeve wall and about half the axial extent of the counterplate.

Response to Arguments

3. Applicant's arguments filed on 1/13/2003 have been fully considered but they are not persuasive. The applicant's argument is on the ground that "the cited reference (Miura) does not in any sense teach or suggest means for weakening the radial stiffness or strength of the wall. On the contrary, the applicant Miura is expressly concerned with the fact that the wall may not be stiff enough and is seeking to maintain its strength as discussed at column 10, lines 25 - 47. Rather than seeking to weaken the shoulder at 33C, Miura hopes to maintain the strength of the shoulder, while forming a tapered guide portion 33C to facilitate the press fitting or insertion of the constellate 44 as described at column 12, lines 15-20". The Examiner respectfully disagrees with the Applicant. It is noted that there is virtually no difference between the structure of Miura and the structure of the present invention. Miura has four recesses in the inner and outer radius of the shoulder of the sleeve to weaken the shoulder (it is obvious that the shoulder is weakened by four recesses as shown in Fig. 2) for the purpose of facilitating the insertion and relieving the welding (abstract). The only difference is the shape of the groove region. However, Miura teaches that the groove region can be "wedge-shape, triangular, trapezoid or other cross-sectional shape" (Col. 12, lines 9-12). Miura never concerns that the wall of the sleeve is not stiff enough and is seeking way to maintain the strength of the sleeve shoulder because at Col. 10, lines 25-47, Miura discusses about the joining of the thrust plate and the shaft and seeking a way to improve the joining strength by forming a relief portion 70 as shown in Fig. 4A to Fig. 4C. Miura does not try to maintain the stiffness of the shoulder as described in Col. 12,

lines 15-20 when referring to the shape of the relief portion 60 can be in the same way as the relief portion 70 as shown in Fig. 4A to Fig. 4C.

Because every features of the claimed invention as recited in the claims have been fulfilled by Miura, the rejection is still deemed proper.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Information on How to Contact USPTO

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (703)305-3466. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703)308-1371. The fax phone numbers

Application/Control Number: 09/894,475

Page 7

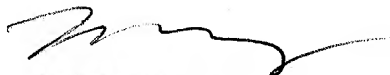
Art Unit: 2834

for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1782.

HNN

April 21, 2002


NESTOR RAMIREZ
SUPERVISOR, PATENT EXAMINER
TECHNOLOGY CENTER 2800